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SALESMAN / WOMAN

AN OCCUPATIONAL PROFILE



Ministry of Colleges and Universities Program
Resources
Branch



WEATING, REFRIGERATION & AIR CONDITIONING



SALESMAN/WOMAN

HEATING, REFRIGERATION AND AIR CONDITIONING

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The History of the Analysis

On February 15, 1974 as a result of a series of meetings between representatives of the Heating, Refrigeration and Air Conditioning Industry, the Government of Ontario and the Federal Government, agreement was reached to participate in a Canada-wide joint Industry Task Analysis Program.

The Program Resources Branch, Ontario Ministry of Colleges and Universities, accepted the responsibility of providing trained analysts to conduct the actual analysis within Ontario with the guidance of a steering committee selected from a cross-section of the industry and operating under the Chairmanship of Mr. W.F. Marshall of Marshall Refrigeration Co. Ltd.

The Program Resources Branch, Ministry of Colleges and Universities wishes to acknowledge the support and assistance of the following members of the H.R.A. Industry Analysis Steering Committee:

W.F. Marshall (Chairman)
L. Cianfarani

P. Drabinsky
R.D. Fraser
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J.W. Ingram
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Handling Group
Techaire Systems Inc./O.R.A.C.
H.R.A. Institute of Canada
G. Granek & Associates
Shell Canada Ltd./O.P.A.
Mohawk College/R.S.E.S.
Jenkinson & Co. Ltd./ASHRAE
O.R.A.C.
Lennox Industries (Canada) Ltd./
HRAI
Margell Mechanical Contractors Ltd.

Scope of the Analysis

The analysis contains only those phases of the Industry considered essential in the Province of Ontario. It is limited to the body of knowledge and skills as outlined and agreed to by the Industry Analysis Steering Committee.

It was agreed that the analysis should be broad enough to cover the whole family of occupations which are representative of the Heating, Refrigeration and Air Conditioning Industry up to, but not including, professional or pure management levels. The scope of each of the occupational groups to be covered, including a general breakdown of the industry as defined by the Committee, is represented graphically by Fig. 1.

Fig. 1

REFRIGERATION

AIR CONDITIONING

Domestic	Automotive		Mobile
Commercial	Residential		Marine
Gas	Commerical/	Residential	Commerical
Oil			
Sheet	Metal		
	Electrical		
	Plumbing		
MANUFACTURING	SYSTEM DESIGN	DISTRIBUTION	INSTALLATION AND SERVICE
Applications Tech.	Design Consultant	Applications Tech.	Applications Tech.
Sales Tech.	Estimator	Sales Tech.	Estimator
Telephone			
Order Desk	Design Draftsman	Purchasing	Sales Tech.
		Order Desk	Field Inspector
		Counterman	Mechanic
		Order/Picker and/or	Purchasing
		Stockman	Service Order Desk

Objectives

HEATING

Although one of the essential aims of this industry/ government project is to establish an Ontario standard, it is expected that a number of equally important benefits will be provided such as:

- a basis for effective training to meet the needs of all levels of the industry in order that industry's training resources may be utilized more effectively;
- a career plan with various entry and exit levels to meet individual requirements;
- a basis for common training programs across Canada with a national standard of certification;
- a means for counselling students and attracting young people into a fast growing segment of the economy;
- a means of improving communications between industry and government on training matters.

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Statement of Method

The survey, conducted by field analysis teams supervised by Mr. G.I. Bruce, Senior Training Consultant, commenced in the fall of 1974. By means of personal interviews with industry management and employees, the individual tasks comprising each occupation were determined.

The analysis teams, coordinated by G.F. Starink, asked such questions as:

- What does the worker do?
- How does the worker do it?
- Why is he/she doing it?
- What are the skills and knowledge involved?
- What is the minimum acceptable standard of performance expected?

The goals established were to determine which occupations make up the industry, to describe them in terms of performance objectives and performance standards and through these "occupational profiles" to produce a structured training progression.

Data from Statistics Canada was used to determine the population (i.e. companies) distribution for H.R.A. Industries in Ontario. A representative sample, from which valid and reliable data could be extracted, was established with the aid of the Steering Committee using agreed upon guidelines to cover significant differences for: - geographical distribution on a north/south basis; establishment size (1-10 and 11 plus); number and types of companies within each of the heating, refrigeration and air conditioning segments of the industry.

In the Industry sample encompassing over 50 companies across Ontario approximately 100 interviews were conducted and the resultant data recorded.

A task analysis of this data resulted in a consolidation of occupations from the 57 titles found within the industry to the 12 major occupations submitted to the Steering Committee in mid 1975.

The order of completion of the occupational profiles will be in accordance with priorities established by the Steering Committee.

Occupational Profiles

The following occupational profiles have been accepted by the Steering Committee. Occupations not indicated as completed are subject to on-going modification in title and content subject to approval by the committee.

Each profile is a description of the occupation in terms of performance objectives and performance standards for Ontario.

- Refrigeration & Air Conditioning Mechanic (Completed Dec./75)
- Counterman H.R.A. (Completed Jan/76)
- Warehouseman H.R.A. (Completed Jan./76)
- Salesperson
- Heating Serviceman Gas & Oil
- Design Draftsman (Intermediate, Junior)
- Designer (Technician)
- Designer (Technologist)
- Dispatcher
- Estimator
- Order Desk Clerk
- Purchasing Agent



CCDO No.	VES TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard	the use of communicate using the most effective medium for maximum results - communicate using the most effective medium for maximum results - creatles and special market reports - create rapport with other departments - create rapport with other acceptance, advertising and company policy and relate to appropriate department - company policy and relate to appropriate department - create and special market reports - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company policy and relate to appropriate department - create rapport with other acceptance, advertising and company and compa
for: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	ENABLING OBJECTIVES : will be able to	- Converse effectively by telephone and face to face through the use of various techniques. - Write business letters and prepare written reports - Develop presentation skills - Understand and resolve customer complaints and problems while maintaining company's point of view and customer satisfaction - Use tact and judgement in investigating customer credit, collecting overdue payments and analyzing poor market performance etc. - Anticipate customer and engineering demands and be prepared to supply or extract the necessary data - Anticipate customer and engineering demands and uses of technical terminology and ideas associated with them. - Arrange and conduct meetings with customer, engineering and/or installation groups - Determine the most appropriate and effective time to approach each customer - Interpret and relate company policy to clients
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES : to be able to	COMMUNICATE EFFECTIVELY
SPEC	No.	



SPE	SPECIFIC PERFORMANCE OBJECTIVES for:	or: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	CCDO No.
No.	TERMINAL OBJECTIVES : to be able to	ENABLING CBJECTIVES : will be able to	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard
	READ: CATALOGUES, HANDBOOKS AND MANUALS	- Interpret standard terms, symbols and codes used in heating, refrigeration and air conditioning descriptions and notes found in catalogues, handbooks and manuals. - Search and locate information on a specific technological process and/or individual equipment units from corresponding identifiers including capacities, ratings and dimensions through the use of charts, tables and graphs - Establish the differences where more than one model, type or system can be implemented - Locate and evaluate technical literature to supplement data required by client groups and to keep abreast of current related technology	The Salesman/woman will: - Verify a selected system and/or equipment unit by comparing relevant information extracted from catalogues, handbooks and manuals, with the corresponding requirements of the customer - Determine the parameters of performance - Confirm the selected equipment using data from source of literature to support and clarify the basis of final selection - Extract the data required to: - size HRA units - check air and operating parameters against design estimates - select replacement units - select replacement units - select replacement units - select replacement units - select replacement units



NCE OBJECTIVES for: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	ENABLING CBJECTIVES TE : will be able to	The Salsanna Wolls and diagrams and sacrated units associated units associ
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES : to be able to	READ: - MECHANICAL AND ARCHITECTURAL DRAWINGS, SPECIFICATIONS AND CONTRACTS
SPE	No.	



PECI	SPECIFIC PERFORMANCE OBJECTIVES for:	for: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	CCDO No.
No.	TERMINAL OBJECTIVES : to be able to	ENABLING OBJECTIVES ; will be able to	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard
	Develop Sales Leads	- Maintain and expand sales leads through personal contacts by developing a customer relationship based upon trust, reliability and dependability - Evaluate, by reviewing and analyzing, construction reports, government and related industry activities, etc. - Select the appropriate department and/or level of contact for initial and subsequent approaches in diverse corporate structures - Develop an awareness of trends in industry, market complexity, diversity of customer population and demands - Schedule prospect calls - Qualify prospects - sales volume, profit potential, credit potential	The Salesman/woman will: follow-up sales leads resulting from requests for estimates and quotes monitor and extract sales leads from construction reports, tenders, new company and reorganization announcements, etc. generate sales leads through long standing customers obtain and maintain prospect lists make prospecting a continuous process



No. : to be able to ANALYZE CUSTOMER NEEDS	the state of the s		
ANALYZE CUSTOMEN	BJECTIVES	ENABLING OBJECTIVES : will be able to	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard
	R NEEDS	- Understand, Interpret and evaluate technical data - Formulate and define the customer's problem in terms of his technical, economical, social and business needs - Understand the theory and function of heating, refrigeration and air conditioning systems and their components - Apply techniques of deductive questioning to obtain the elements of the customer's needs - Perceive by visualizing the layout and operation of equipment in existing installations and to visualize the effects of modifications to equipment or facilities - Research and evaluate equipment application in specialized areas	The Salesman/woman will: - prepare an appropriate interpretation of customer needs, leading to the correct identification of the system, equipment unit, or modification necessary.



CCDO No.	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard	The Salesman/woman will: - present a complete system or equipment configuration which will meet the design criteria submit details of the adaptability of existing systems to other equipment and/or systems and satisfying the design criteria the location and installation of equipment complying with local codes and regulations
or: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	ENABLING CBJECTIVES : will be able to	- Understand and evaluate construction and mechanical drawings - Interpret and use technical tables and charts (e.g., ASHRAE) - Develop an intimate knowledge of the equipment - Calculate heat loss/or heat gain values - Determine the adaptability of the existing system - Determine the load requirement - Size equipment - Size equipment - Determine energy requirement (electric, gas, oil) - Determine method and location of installation
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES : to be able to	RECOMMEND SYSTEM LAYOUT V.
SPEC	S. O.	



	OBJECTIVES ENABLE to	The Salesman/woman will: and their interaction with the system clements and their interaction with the system clements system clements and the operation of HRA systems with emphasis on variables such as: - Understand the operation of HRA systems and the operation of HRA systems with emphasis on variables such as: - power supply committed and apply terminology used power supply terminology used power supply terminology used parameters of the selected system and/or equipment units full relative needs system and/or equipment units full relative needs system and/or equipment units full relative needs systems and/or equipment units full relative needs systems and/or equipment units full relative needs systems and/or equipment units full relative needs and accessories configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Configuration - Determine optimum product require-displaced flactors such as: - Competion of operation - Determine optimum product require-displaced flactors such as: - Competion of operation - Determine optimum product require-displaced flactors such as: - Configuration of operation - Determine optimum product require-displaced flactors such as: - Competion of operation - Determine optimum product require-displaced flactors such as: - Competion of operation - Determine optimum product require-displaced flactors such as: - Competion of operatio
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES ; to be able to	SELECT A SYSTEM AND/OR EQUIPMENT FOR: - HEATING, REFRIGERATION AND AIR CONDITIONING
SPE	Š	



CCDO No.	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard	
SALI	ENABLING CBJECTIVES : will be able to	- Identify HRA equipment by name, type, code number and physical appearance - Evaluate relevant tax implications
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES: to be able to	
SPECI	No.	



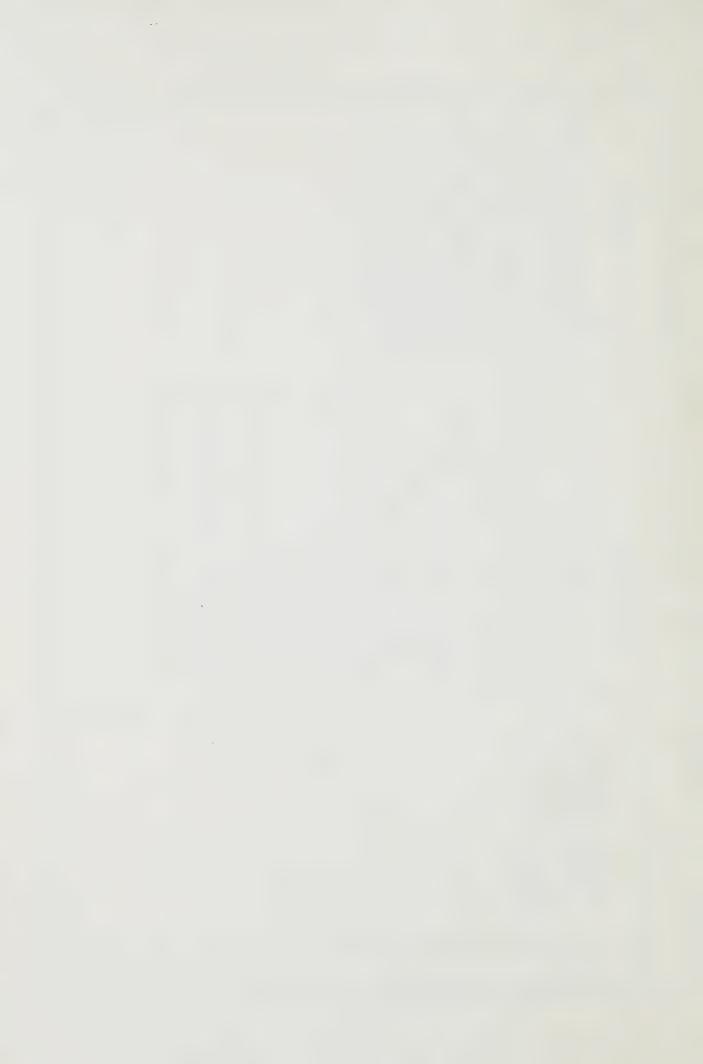
ECI	SPECIFIC PERFORMANCE OBJECTIVES for:	for: SALESMAN/WOMAN GAir Conditioning Heating, Refrigeration & Air Conditioning	CCDO No.
No.	TERMINAL OBJECTIVES : to be able to	ENABLING OBJECTIVES : will be able to	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard
	PREPARE COST ESTIMATES	- Develop rough piping and wiring layout - Determine system required - Develop estimates for the following: - equipment component cost - installation cost - construction cost for small installation - energy consumption and cost - Understand and use the format used by industry for estimating - Understand the limitations of all inclusive unit cost figures (i.e., installation cost \$'s per BTU or Ton of refrigeration) - Analyze and utilize estimates for sub-contracting where required - Determine operation and maintenance cost	The salesman/woman will: Submit an estimate that contains all the variables necessary and sufficient for a particular job Submit an estimate that clearly states the parameters of the cost figure Submit alternative cost estimate based on such elements as: - equipment variation - different energy type - competitors proposal - projected expansion



VCE OBJECTIVES for: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	OBJECTIVES ENABLING OBJECTIVES TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard	- Understand profit margin limitations of the company - Understand the production cost element of the equipment - Understand and interpret the terms of warranty - Understand and interpret the terms of warranty - Understand and interpret the terms of warranty - Understand and interpret the terms of the equipment - Understand and interpret the terms of warranty - Understand and interpret the terms of the equipment - Understand and interpret the terms of the equipment - Understand and interpret the terms of the equipment - Understand and interpret the terms of the equipment - Understand the equipment
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES: to be able to	PREFARE QUOTES
SPEC	° S	



SPEC	SPECIFIC PERFORMANCE OBJECTIVES for:	Of: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	CCDO No.
0 2	TERMINAL OBJECTIVES : to be able to	ENABLING OBJECTIVES : will be able to	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard
	ESTIMATE CUSTOMER LOAD REQUIREMENT	- Determine the use of the building - Determine the annual temperature variations of the locality - Determine the desired temperature level - Determine the insulation factors for such elements as: - walls - floots - floots - floots - floots - calculate the physical dimensions of the building - Determine the sensible heat factors from sources such as: - loading frequency - people - lights (watts) - appliances - volume and type of product to be stored, etc Utilize standard load calculation forms and determine the limitations in their use - Determine the system operating time in hours per day	The Salesman/woman will: - present load calculation that contains all the necessary factors that includes both the physical and use factors, such that, the equipment will operate effectively and safely. - present the estimate so it present the estimate so it limitations and optimal operating characteristics.



OBJECTIVES for: SALESMAN/WOMAN CONDITIONING Heating, Refrigeration & Air Conditioning	JECTIVES ENABLING OBJECTIVES TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard	remarkactions commonly used such as: commonly used such as: commonly used such as: - shipping and use business forms - station and record to the appropriate transaction - service -
SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES : to be able to	RECORD & RESEARCH TRANSACTIONS
SPEC	o Z	



O	SPECIFIC PERFORMANCE OBJECTIVES for:	for: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning	CCDO No.
o Z	TERMINAL OBJECTIVES : to be able to	ENABLING OBJECTIVES : will be able to	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard
	ASSESS ENERGY CONSERVATION FACTORS	- Determine the availability of energy supply (fuel and/or electricity) - Analyze the efficiency ratings of equipment with respect to energy consumption - Understand the codes and regulations governing energy - Understand the economics and efficiency factors associated with different modes of energy - Develop an understanding for the conservation of energy due to factors such as: - equipment - insulation - system design - product preparation, etc. - Understand the limitations for different modes of energy - Calculate the savings to the customer from the use of energy recovery devices - Determine the safety factors involved with fuel (gas and oil)	The Salesman/woman will: - select a system which best meets the current requirement for the conservation of energy and satisfying the customer needs - select a system which can adapt to different modes of energy to conserve and/or economize on energy while complying with pollution standard - select an appropriate energy recovery device with an estimate of the accruable benefits



	CCDO No.	TERMINAL PERFORMANCE CRITERIA : Minimum acceptable standard	The Salesman/woman will attempt to develop an acceptance for the product and service and overcome resistance or opposition by the sales prospect by utilizing the fundamentals of sales psychology. can can
AND	<pre>OF: SALESMAN/WOMAN Heating, Refrigeration & Air Conditioning</pre>	ENABLING OBJECTIVES : will be able to	- Use a knowledge of perception by recognizing: - sales as interaction between two people and understanding the rationale for differences between prospects - the factors determining prospects differences in interpreting words and responding - the factors of perceptual set - the factors of perceptual set - naving an awareness of the stimulus - response concept - recognizing how sales messages as stimuli - recognizing how sales messages re-direct set - Understand the techniques that can change thinking and resultant behavior
	SPECIFIC PERFORMANCE OBJECTIVES for:	TERMINAL OBJECTIVES: to be able to	APPLY THE FUNDAMENTALS OF SALES PSYCHOLOGY
	SPEC	° °	



SPECIFIC PERFORMANCE OBJECTIVES for: TERMINAL OBJECTIVES TO be able to APPLY THE FUNDAMENTALS OF SELLING TECHNIQUES
SPEC.



No. TERMINAL OBJECTIVES for: TERMINAL OBJECTIVES TO be able to PROVIDE CUSTOMER SERVICE
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